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AMENDMENTS TO THE CLAIMS

1. (Currently amended) A method for detecting a polymerase chain reaction (PCR) product, comprising:

providing at least a pair of electrodes in a PCR solution-containing vessel;

performing PCR;

producing an electric field between the electrodes; and

measuring a change in a dielectric property in the PCR solution,

wherein the PCR is performed in the absence of an ionically labeled probe the measuring is performed in the absence of an additional probe for generating an electrical signal.

2. (Currently amended) The method according to claim 1, wherein the PCR is performed in the absence of an ionically labeled primer the electrode does not comprise an attached probe for generating an electrical signal that binds to reactants or products of the PCR.

3. (Original) The method according to claim 1, wherein the PCR solution-containing vessel is a PCR tube or a polymerization microchamber.

4. (Original) The method according to claim 1, wherein the dielectric property is an impedance, a dielectric constant, or an admittance.

5. (Previously presented) The method according to claim 1, wherein the electric field is produced using an alternating current at a frequency of 1 Hz to 100 MHz.

6. (Previously presented) The method according to claim 1, wherein the electric field is produced using an average AC voltage of 1 mV to 10 V.

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7. (Previously presented) The method according to claim 1, wherein the PCR solution-containing vessel includes a PCR tube, and the electrodes are installed to be opposite to each other at a predetermined height from a bottom of the PCR tube.

8. (Previously presented) The method according to claim 1, wherein the PCR solution-containing vessel includes a polymerization microchamber, and the electrodes are installed at upper and lower sides of the microchamber, respectively.

9. (Previously presented) The method according to claim 1, further comprising: connecting an impedance sensor to the electrodes to measure a change in an impedance magnitude with increase of the number of PCR cycles.

10. (Currently amended) The method according to claim 1, further comprising: connecting an impedance sensor to the electrodes to measure a change in an impedance magnitude with increase of the number of PCR cycles at a predetermined alternating current voltage frequency.

11. (Currently amended) The method according to claim 10, wherein the predetermined alternating current voltage frequency is about 1,000 Hz.